

Pedagogical activities

Teaching and courses

- Mathematical Seminar III - VŠB-TU Ostrava, winter semesters in 2017, 2018, 2019, 2020. The course for students of MSc. study programme Computational Mathematics is focused on an introduction to the mathematical theory of elasticity and elasto-plasticity.
- S. Sysala: *Linear elasticity problem: analysis and solution*. Textbook for VSB-Technical University of Ostrava, 2020, 37 pages.

Program codes in MATLAB

- M. Čermák, S. Sysala, J. Valdman. [Matlab FEM package for elastoplasticity](#), 2018.
- https://github.com/sysala/Matlab_nonlinear_elasticity_3D_FEM_quasi-Newton_DCG, 2023.

Supervising of students

- T. Luber, VŠB-TU Ostrava, Ph.D. thesis, defended in 2022.
- J. Cenek, VŠB-TU Ostrava, 2018-2020, master thesis, defended in 2020.
- J. Kmec, Palacký University, Olomouc, 2013-2014, master thesis, defended in 2014.
- M. Čermák, VŠB-TU Ostrava, Ph.D. thesis, supervisor-specialist, defended in 2012.

Invited lectures

- Selected Newton's methods in computational elasto-plasticity. Farkas Miklos seminar, Budapest University of Technology and Economics, October 13, 2023, https://math.bme.hu/farkas_seminar
- *Saddle-point problem with bilinear Lagrangian and convex constraints: analysis, numerical solution, applications*, Nečas Seminar, Charles University, Prague, 6.12.2021
- *A rigorous variant of the shear strength reduction method and its usage in geotechnical stability analysis*, seminar series Current Problems in Numerical Analysis, Institute of Mathematics of the Czech Academy of Sciences, Prague, 17.9.2021.
- *Computable majorants of the limit load in perfect plasticity*. Nečas Seminar, Charles University, Prague, 19.3.2018.
- *Limit load for variational problems with linear growth and its importance in perfect plasticity*. Seminar on Numerical Analysis, Institute of Geonics, Ostrava, January 23, 2015.

- *Nonsmooth Newton method in optimization problems.* Seminar on Applied Mathematics, FEI VŠB-TU Ostrava, November 5, 2013.
 - *Properties and simplifications of constitutive time discretized elastoplastic operators.* Seminar on PDEs, Institute of Mathematics of the Czech Academy of Sciences, Prague, May 15, 2012.
 - *Preliminary modelling of rock pillar failure processes based on continuum mechanics.* Nečas Seminar, Charles University, Prague, May 14, 2012.
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